United States Air Force
Air Force Materiel Command
Air Force Development Test Center, Office of Public Affairs
101 W. D Avenue, Suite 110, Eglin AFB, FL 32542-5498 Tel. (850) 882-3931
August 1996 FACT SHEET

The Role of Wetlands

Introduction

Eglin Air Force Base is the largest air force base in the free world, including 724 square miles of land area and about 130,000 square miles of controlled airspace overlying land and water. In this setting, Eglin conducts its primary mission of full-service air armament development through weapons system research, development, testing and evaluation; training; space operations; and base and range support. While fulfilling its mission, Eglin also manages its natural resources, acting as a steward to protect plants and animals for future generations.

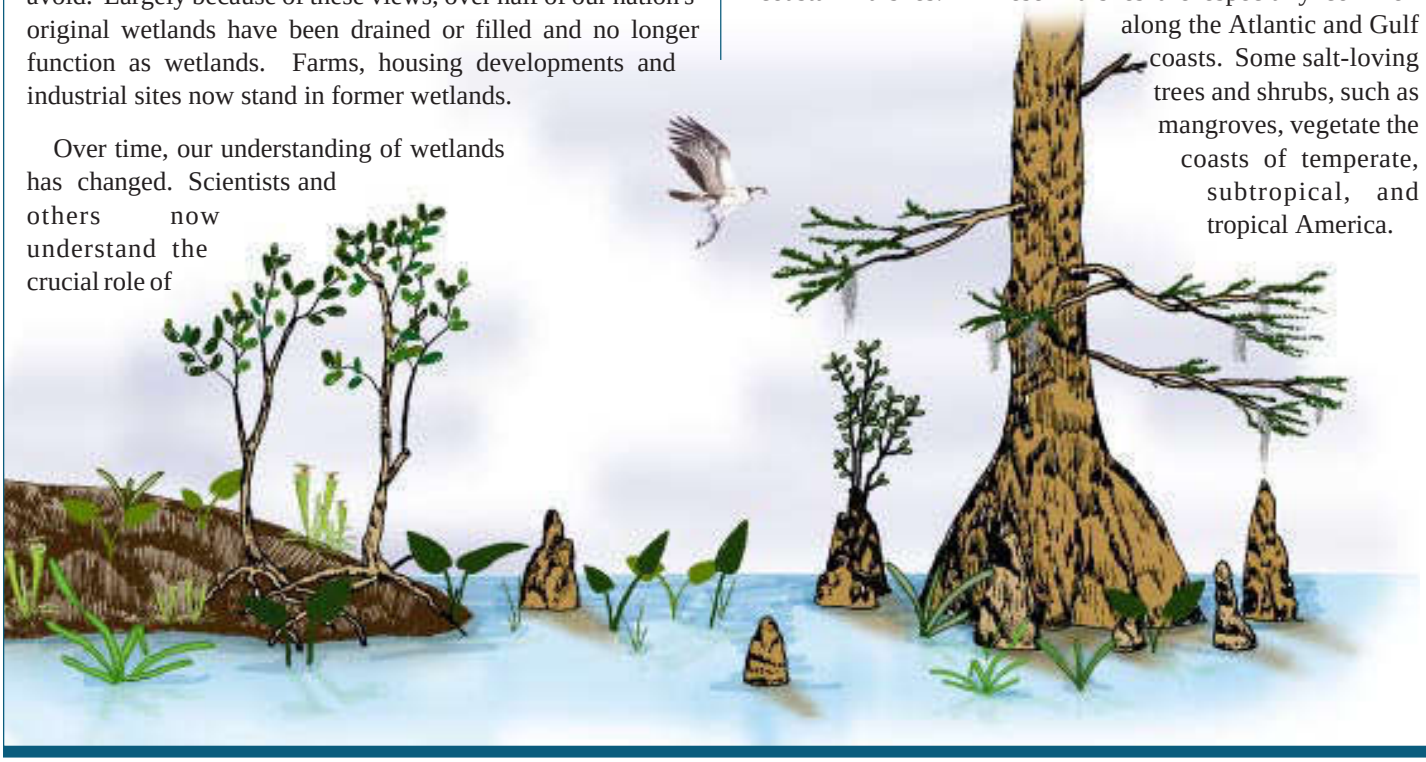
The base is home to a wide variety of plant and animal life specially adapted to Eglin's wetlands. Wetlands are areas with periodically waterlogged soil. About 7 percent of Eglin's lands, mostly flat bottomland or swamp areas, fit this category. At certain times of the year, these areas have standing water from a few inches to a foot or more in depth.

In the past, the importance of wetlands was not well understood, and wetlands were often regarded as wastelands to eliminate or avoid. Largely because of these views, over half of our nation's original wetlands have been drained or filled and no longer function as wetlands. Farms, housing developments and industrial sites now stand in former wetlands.

Over time, our understanding of wetlands has changed. Scientists and others now understand the crucial role of wetlands and the many important benefits they provide to the environment and people. Wetlands purify water by removing and retaining nutrients, processing wastes and trapping sediments. They help prevent floods in populated areas by absorbing floodwaters and then slowly releasing them. Wetlands also help to minimize land erosion. Coastal wetlands play a major role by absorbing the force of storms as they hit shore. Wetlands provide important habitat to fish and wildlife, and support hunting and fishing activities. In addition, wetlands serve as natural recreational and tourism sites.

Classes of Wetlands

There are two basic types of wetlands—coastal wetlands and inland wetlands. Coastal wetlands are linked to our nation's estuaries, where sea water mixes with fresh water. Many plants cannot tolerate this environment because of the salt water and the fluctuating water levels. As a result, some shallow coastal areas are unvegetated mud or sand flats. Some plants, however, have adapted successfully to this brackish environment. A few grasses and grass-like salt-loving plants cover large areas called "coastal marshes." These marshes are especially common along the Atlantic and Gulf coasts. Some salt-loving trees and shrubs, such as mangroves, vegetate the coasts of temperate, subtropical, and tropical America.



Inland wetlands are far larger in area and may be found throughout the nation's interior. They include floodplains along rivers and streams, isolated depressions surrounded by dry land, and the margins of lakes and ponds. Inland wetlands may also be found along the margins of coastal marshes where salt water does not extend. Inland wetlands include marshes, swamps, ponds, bogs, and bottomlands.

Wetlands Vary in Other Ways

Wetlands are not all alike, because they vary according to three additional characteristics: vegetation, soil and water saturation. If an area shows one or more of these wetland indicators, the area is most likely classified as a wetland.

Nearly 5,000 different plants may occur in U.S. wetlands. Wetland vegetation often includes plants such as cattails, bulrushes, cordgrass, sphagnum moss, sedges, rushes, arrowheads and water plantains. All of these plants are water-loving. Shallow rooted trees, such as bald cypress, willows and mangroves, may also be found.

Soils vary greatly from wetland to wetlandó over 2,000 soil types have been found in wetlands. All of these are similar in that they formed in conditions where soil oxygen was limited because of soil saturation. They often include decomposed or decomposing plant matter and may smell sulfurous, like rotten eggs.

Threats to Biodiversity in Wetlands

Wildlife, shellfish and natural fisheries depend on wetlands for their very existence. About one-third of America's threatened and endangered species are supported by wetlands. Each species is tailored to the specific conditions found at the wetland, each interacting in a complex web of life. Ranging from plankton to raccoons, and from shrimp to birds, all play an important role in the food chain.

Wetlands have continued to diminish in recent decades, despite greater recognition of their importance and efforts to protect them. Nearly 11 million acres of marshes and swamps were destroyed between the mid-1950s and the mid-1970s. This is equivalent to an area three times the size of New Jersey. Most of the acreage, 87 percent, was converted to agricultural use. Urban and other development was largely responsible for the remaining losses. Coastal wetlands are most affected by urban development, except in Louisiana, where losses occur as waters rise in the Gulf of Mexico. Wetlands have also been threatened by chemical contamination and other pollution.

The loss of freshwater wetlands has affected states like Florida, Louisiana, Mississippi, Arkansas, North Dakota, South Dakota, Nebraska and Texas. For example, man-made channeling of the Mississippi and the draining of wetlands have led to increased flood damages. Waterfowl populations are also declining as a result of the loss of wetlands.

Laws Protecting Wetlands

A variety of laws have been passed to protect wetlands. The major federal program is Section 404 of the Clean Water Act, which regulates activities in wetlands. Under this law, the placement of dredged or fill material into national watersó including most wetlandsó requires a permit from the Army Corps of Engineers. Civil and/or criminal penalties are possible if permits are not obtained or if permit terms are not followed. Under the Corps' procedure, a public notice of a permit application for a proposed project is issued and public comments are solicited. Permits are evaluated for environmental criteria and factors that determine if the project is in the public?s best interest. Important as Section 404 has been, it does not regulate drainage or pumping operations. These processes can often drain a wetland without violating Section 404.

States and local municipalities have enacted laws in recent years to regulate and protect local wetlands. As a result of these regulations, many coastal states improved protection of their coastal wetlands. Fewer than 20 states, however, have laws specifically regulating activities of inland wetlands. Even when there are laws, inland wetland protection is often limited. Without strong formal programs to protect interior wetlands, the voluntary actions of citizens are crucial to wetland protection.

The regulation of wetlands is a controversial issue. Not everyone agrees that wetlands should go untouched. Property owners often want to develop their land in ways that require draining saturated land and clearing for construction. When state and federal laws prevent such development, land owners, in turn, want compensation. Sometimes alternative, more appropriate uses may be found that leave the wetlands largely intact. Examples include waterfowl production, hunting and trapping leases, and selective timber harvest. In addition, wetlands can be donated to conservation agencies for tax credit. Development projects may often be reserved for upland sites.

Wetlands are an important resource that continues to dwindle. While Eglin wetlands are protected as a result of defense needs and proactive stewardship, many areas are less fortunate. Conservation measures can slow wetlands loss and protect existing areas. Economic incentives for wetland protection, combined with economic disincentives for development, may also be designed. Together these measures can help ensure that wetlands, and the benefits they provide, endure.

This fact sheet is one in a series designed to inform the public about ecosystem and resource management activities at Eglin Air Force Base.
For more information, contact Environmental Public Affairs Coordinator, AFDTC/PAV, (904) 882-4436, Ext. 333.
This fact sheet is also available on the World Wide Web via the Eglin Homepage at http://www.eglin.af.mil